

Honors Algebra 2 Final Exam Formula Sheet

$$a_n = a_1 + (n - 1)d$$

$$a_n = a_1 \bullet r^{n-1}$$

Alternate form when given a_k not a_1 :

$$a_n = a_k \bullet r^{n-k}$$

$$S_n = \frac{n}{2}(a_1 + a_n)$$

$$S_n = \frac{a_1(1 - r^n)}{1 - r}$$

$$S_n = \frac{n}{2}[2a_1 + (n-1)d]$$

$$S_n = \frac{a_1 - a_n r}{1 - r}$$

$$\text{Infinite } S_\infty = \frac{a_1}{1 - r}$$

$$A = P\left(1 + \frac{r}{n}\right)^{nt} \quad y = ae^{-kt} \quad y = a(1 + r)^t \quad y = a(1 - r)^t$$

Conic Equations

Parabola $y = a(x - h)^2 + k$ $x = a(y - k)^2 + h$

Circle $(x - h)^2 + (y - k)^2 = r^2$

Ellipses $\frac{(x - h)^2}{a^2} + \frac{(y - k)^2}{b^2} = 1$ $\frac{(x - h)^2}{b^2} + \frac{(y - k)^2}{a^2} = 1, c^2 = a^2 - b^2$

Hyperbolas $\frac{(x - h)^2}{a^2} - \frac{(y - k)^2}{b^2} = 1$ $\frac{(y - k)^2}{a^2} - \frac{(x - h)^2}{b^2} = 1, c^2 = a^2 + b^2$